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EPA4452@epa.state.il.us on 03/07/2000 04:47:34 PM

To: cc: MICHAEL MCATEER

Subject: Sauget Landfill

Per our conversation today, I have attached two sections of the RCRA Decision Guide which IEPA uses to review RCRA permit applications. Both of these files are in WordPerfect 6.1 format. The portions of these files which do not pertain to landfills at CERCLA sites have been struck out.

Attachment "rcra-dg1.wpd" is the sub-section D-6 of the Decision Guide which pertains to landfills.

Attachment "rcra-dg2.wpd" is the section on Closure.

If you have problems opening the files, or have questions regarding them, please call me at 217.524.3265.

Rob



- RCRA-DG2.WPD



- RCRA-DG1.WPD

RCRA Decision Guide (revised 1990)

D-6 Landfills

D-6a List of Wastes: 703.207(a)

Provide a list of all hazardous wastes placed or to be placed in each landfill or landfill cell.

~~D-6b Liner System Exemption Requests: 703.207(b)(1), 724.190(b)(2), 724.401~~

If an exemption is requested from the requirements to install a liner and leachate collection and removal system, document the design and operating practices that will, in conjunction with local aspects, prevent the migration of hazardous constituents into ground or surface waters at any future time.

~~D-6b(1) Exemption Based on Existing Portion: 703.207(b)(1), 724.401(a)~~

Existing portions of landfills which have waste in place on May 8, 1985 and will have only vertical expansion are exempted from liner system requirements (items D-6c through D-6g). New units, lateral expansion of existing units, and replacement (i.e., all waste removed from an area and then replaced) units at existing facilities are not exempt. Provide a plan showing the limits of the existing portion.

~~D-6b(2) Exemption Based on Alternative Design and Location: 703.207(b)(1), 724.401(d)~~

If an exemption from the double liner system is requested based on an alternative design, document that the alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituent into the ground or surface water at least as effectively as a double liner with a leachate collection/detection system.

~~D-6b(3) Exemption for Monofills: 703.207(b)(1), 724.401(e)~~

Demonstrate that the landfill will consist of a monofill receiving only wastes from foundry furnace emission controls or metal casting molding sand that are not hazardous wastes for reasons other than the toxicity characteristics in 35 IAC Section 721.124, with EPA hazardous waste number of D004 through D017. In addition, demonstrate either of the following:

- The design and operating practices that will, in conjunction with local aspects, prevent the migration of hazardous constituents into ground or surface waters at any future time; or
- The site is located at least one-quarter mile from a source of drinking water, has at least one nonleaking liner, and meets the requirements of 35 IAC Part 724, Subpart F.

~~D-6b(4) Ground Water Monitoring Exemption: 703.207(c), 724.190(b)(2)~~

If an exemption from the Subpart F groundwater monitoring requirements is sought, provide data demonstrating that the following conditions are met:

~~D-6b(4)(a) Engineered Structure: 724.190(b)(2)(A)~~

Provide design data showing that the unit for which the exemption is sought is an engineered structure.

~~D-6b(4)(b) No Liquid Waste: 724.190(b)(2)(B)~~

~~Describe procedures for ensuring that no liquid waste or waste containing free liquids will be received by or contained in the unit.~~

~~D-6b(4)(c) Exclusion of Liquids: 724.190(b)(2)(C)~~

~~Provide design and operating data demonstrating how liquids, precipitation and other run-on and run-off will be excluded from the unit.~~

~~D-6b(4)(d) Containment System: 724.190(b)(2)(D)~~

~~Describe the containment system (both inner and outer layers) which will enclose the waste.~~

~~D-6b(4)(e) Leak Detection System: 724.190(b)(2)(E)~~

~~Describe the design and operating data demonstrating the leak detection system built into each containment layer.~~

~~D-6b(4)(f) Operation of Leak Detection System: 724.190(b)(2)(F)~~

~~Demonstrate the means for ensuring continuing operation and maintenance of the leak detection systems during the active life of the unit and the closure and post-closure care periods.~~

~~D-6b(4)(g) No Migration: 724.190(b)(2)(G)~~

~~Demonstrate that the unit will not allow hazardous constituents to migrate beyond the outer layer of the containment system prior to the end of the post-closure care period.~~

D-6c Liner System, General Items: 703.207(b)(1), 724.401(a) and (c)

Provide a discussion of the following items which apply to the liner system as a whole.

D-6c(1) Liner System Description: 703.207(b)(1), 724.401(a)

Provide a description of the liner system, demonstrating (by description and drawings) that any flow of liquids into and through the liner(s) will be prevented. For each liner within the system (defined as a minimum of one synthetic liner and one soil liner) describe the type of liner, its material and its thickness. The liner system includes the liner foundation, bottom soil or composite liner, leachate detection system, top synthetic liner, leachate collection system and any protective layer placed to protect the leachate collection system from damage and clogging. ch

D-6c(2) Liner System Location Relative to High Water Table: 703.207(b)(1), 724.401(a)

Provide data showing seasonal fluctuations in the depth of the water table and the location of the seasonal high water table in relation to the base of the liner system. Groundwater levels and liner foundation elevations should be shown on geological cross sections. ok (above grade + flood levels)

D-6c(3) Loads on Liner System: 703.207(b)(1), 724.401(a)

Provide the results of calculations defining the minimum loads or stresses which will be placed on the liner system considering:

- . Internal and external pressure gradients;
- . Stresses resulting from settlement, compression or uplift;
- . Both static and dynamic loads;
- . Stresses due to installation or construction operations;
- . Stresses resulting from operating equipment; and
- . Stresses due to the maximum quantity of waste, cover, and proposed post-closure land use.

D-6c(4) Liner System Coverage: 703.207(b)(1), 724.401(a)(1)(C)

Demonstrate that the liner system will be installed to cover all surrounding earth likely to be in contact with the waste or leachate (i.e., construction, as built, or detailed drawings).

D-6c(5) Liner System Exposure Prevention: 703.207(b)(1), 724.401(a)(1)(A)

Demonstrate that the liner system will not be exposed to wind or sunlight or, if exposure of any part of the system is to be permitted, that such exposure will not result in unacceptable degradation of that portion of the system (i.e., drawings and/or liner specifications as appropriate). If the liner system will be exposed, provide calculations defining the stresses on the liner system due to thermal expansion and contraction.

D-6d Liner System Foundation

D-6d(1) Foundation Description: 703.207(b)(1), 724.401(a)(1)(B)

Describe the foundation for the liner system, including the foundation materials and indicate bearing elevations on geological and construction drawings. Indicate any load bearing embankments placed to support the liner system.

D-6d(2) Subsurface Exploration Data: 703.207(b)(1), 724.401(a)(1)(B)

The engineering characteristics of the liner system foundation materials, including subsurface soil, bedrock and hydrogeologic conditions, should be verified through subsurface explorations. These efforts should be fully described by including location plans and cross sections for test borings, test pits, etc., and explanations or references for the procedures used, and may include:

- . Historical data;
- . Test borings;
- . Test pits or trenches;
- . In situ tests; and/or
- . Geophysical exploration.

D-6d(3) Laboratory Testing Data: 703.207(b)(1), 724.401(a)(1)(B)

Results from sufficient index testing must be provided to classify the site materials. Other lab test data should be provided to evaluate the engineering properties of the foundation materials, particularly for

strength, hydraulic conductivity, compressibility (consolidation), and other important design parameters. Provide copies of the test methods used to test the material or provide references, as appropriate and with any revisions, to standard test procedures. ASTM, EPA or other appropriate standard methods should be used when available. Contact IEPA Division of Land Pollution Control for Agency approved hydraulic conductivity testing methods.

D-6d(4) Engineering Analyses: 703.207(b)(1), 724.401(a)(1)(B)

Engineering analyses should be provided which are based on the data gathered through subsurface exploration and laboratory testing programs. Include a discussion of the methods used, assumptions, copies of calculations and appropriate references. This discussion may include:

- . Settlement potential [D-6d(4)(a)];
- . Bearing capacity [D-6d(4)(b)];
- . Stability of the landfill slopes (cut or constructed) [D-6d(4)(c)];
- . Potential for excess hydrostatic or gas pressure [D-6d(4)(d)];
- . Seismic conditions;
- . Subsidence potential; and
- . Sinkhole potential.

D-6d(4)(a) Settlement Potential: 703.207(b)(1), 724.401(a)(1)(B)

Provide estimates of the total and differential settlement of the liner system foundation, including immediate settlement, primary consolidation and secondary consolidation. When performing the analyses, consider the stresses imposed by liners and the applicable stresses computed in Item D-6c(3).

D-6d(4)(b) Bearing Capacity: 703.207(b)(1), 724.401(a)(1)(B)

Provide an analysis of the allowable bearing capacity of the liner system foundation. Compare the allowable bearing capacity to the required bearing capacity based on the loads imposed by the liner system and the applicable loads computed in Item D-6c(3).

D-6d(4)(c) Stability of Landfill Slopes: 703.207(b)(1), 724.401(a)(1)(B)

Provide, as appropriate, analyses of the stability of:

- . Excavated slopes for units or portions of units constructed below grade;
- . Embankment slopes for units constructed with earthen dikes or berms to support the liner system or contain the waste; and
- . Landfill slopes consisting of the liner system or cover system placed on the waste.

Include in the analyses both static and dynamic cases.

D-6d(4)(d) Potential for Excess Hydrostatic or Gas Pressure: 703.207(b)(1), 724.401(a)(1)(B)

Provide estimates of the potential for bottom heave or blow-out of the liner system due to unequal hydrostatic or gas pressure.

D-6e Liner System Liners

D-6e(1) Synthetic Liners: 703.207(b)(1), 724.401(a)(1), 724.401(c)

For each synthetic liner in the system provide the following general information:

- . Thickness;
- . Type;
- . Material;
- . Brand name; and
- . Manufacturer.

Provide data for all synthetic liners under consideration.

Detailed synthetic liner material specifications must also be provided as per item D-6g(1)(a).

D-6e(1)(a) Synthetic Liner Compatibility Data: 703.207(b)(1), ~~724.401(a)(1)(A)~~

Provide the results of liner/waste compatibility testing demonstrating that liner strength and performance are still adequate after exposure to waste leachates and to the waste. Both primary and secondary leachates should be used in this testing.

Provide a detailed description of the testing procedure used, or if appropriate, reference a standard test method, such as EPA Method 9090, along with complete test results. Describe how the waste and waste leachate samples were prepared or obtained and demonstrate that they were representative of what the liner will be exposed to within the landfill. Provide a summary and discussion of the test results and conclusions regarding the suitability of the synthetic liner.

D-6e(1)(b) Synthetic Liner Strength: 703.207(b)(1), 724.401(a)(1)(A)

Provide data showing that the synthetic liners have sufficient strength after exposure to the waste and waste leachate to support the loads/stresses as computed in item D-6c(3) including tensile stresses resulting from settlement. Also demonstrate that the liner seams will have sufficient strength.

D-6e(1)(c) Synthetic Liner Bedding: 703.207(b)(1), 724.401(a)(2)

Demonstrate that sufficient bedding will be provided above and below the synthetic liners to prevent rupture of the synthetic liner during installation and operation (i.e., thickness and gradation). Note: The synthetic membrane of a bottom composite liner should be placed directly on the soil portion.

D-6e(2) Soil Liners: 703.207(b)(1), 724.401(a) and (c)

Provide a description of the soil liner including its classification, thickness and hydraulic conductivity. Indicate if the soil liner is in-place material or if borrow material will be used. For in-place soil, indicate if the soil will be recompacted or amended in any way. For borrow material provide a plan showing the location of the borrow area and indicate if the soil will be amended in any way. When analyzing the soil

liner, assume that the synthetic liners have leaked, thus exposing the soil liner to the waste leachate. Note: The use of in situ soil as the soil liner is permitted only if the in situ soil is recompacted or reworked to provide a hydraulic conductivity of not more than 1×10^{-7} cm/sec. Detailed soil liner material specifications must also be provided as per D-6g(1)(b).

D-6e(2)(a) Material Testing Data: 703.207(b)(1), 724.401(c)

Provide test results for index tests, laboratory and/or in situ hydraulic conductivity (permeability) tests, strength tests, consolidation tests, and shrink-swell properties of the soil liner material. Provide copies of the test procedures, or if appropriate, reference standard test methods, such as ASTM or EPA, along with complete test results. Discuss the potential for dispersion and piping of the soil due to flow of liquid through the soil liner.

D-6e(2)(b) Soil Liner Compatibility Data: 703.207(b)(1), 724.401(a)(1)(A)

Provide the results of permeability testing of the soil liner material using leachate representative of the leachate that the landfill could generate. Discuss the effects, if any, of the leachate on the soil permeability. Provide a copy of the test procedures, or reference appropriate standard test methods, such as EPA Method 9090, along with a description of how the leachate samples were prepared or obtained, a demonstration that the leachate sample is representative, and the complete test results.

D-6e(2)(c) Soil Liner Thickness: 703.207(b)(1), 724.401(c)

For units which have only one synthetic liner, demonstrate that the thickness of the soil liner is sufficient to retard liquid flow through it such that leachate would be wholly contained within the soil liner throughout the operating life and post-closure period of the unit. Provide the calculations, justification of assumptions and parameters used, along with a justification of the numerical technique used. When doing the analysis, assume the worst case conditions (i.e., that the synthetic liner has started to leak in the first year of operation).

D-6e(2)(d) Soil Liner Strength: 703.207(b)(1), 724.401(a)(1)(A)

Demonstrate that the soil liner has sufficient strength to support the loads/stresses computed in item D-6c(3). (Note: Low permeability in some cases is achieved at the expense of adequate strength.)

D-6f Liner System, Leachate Detection System: 703.207(b)(1), 724.401(a)(2), 724.401(c)

Provide the following information about the leachate collection/detection systems. Provide detailed material specifications as per item D-6g(1)(c). Note: The leachate collection system is located above the top synthetic liner in the liner system and the leachate detection system is located between the liners in the liner system.

D-6f(1) System Operation and Design: 703.207(b)(1), 724.401(a)(2)

Describe the design features of the leachate collection and removal system and how the system will function to remove collected leachate in a timely manner. Describe the design features of the leachate detection system and how the system will function to detect any leakage through either liner in a timely manner. Describe how liquid can be removed from the leachate detection system. Describe any protective layer placed over the leachate collection system to protect it from damage caused by the waste or waste placement operations.

D-6f(2) Equivalent Capacity: 703.207(b)(1), 724.401(a)(2) 2

For leachate collection/detection systems which use synthetic drainage material to replace the granular drainage material, demonstrate that the proposed system has a drainage capacity (transmissivity), both in speed and volume, that is equal to or better than a 12-inch thick granular drainage layer that has a hydraulic conductivity of 1×10^{-2} cm/sec.

D-6f(3) Grading and Drainage: 703.207(b)(1), 724.401(a)(2) SK

Indicate the slopes of the leachate collection/detection systems and provide a contour plan for the system along with a plan showing the layout and spacing of the piping system. For systems with slopes of less than 2%, demonstrate that the proposed system will drain as well as one with a minimum of 2% slopes (i.e., through the use of an alternative design). Provide complete details of the piping system along with any sumps, pumps, etc., used to collect, hold, and transport the leachate. Indicate the fate of the collected leachate which is considered a hazardous waste. Demonstrate that the leak detection system (located between the liners) is appropriately graded to assure that leakage at any point in the liner system is detected in a timely manner.

Demonstrate that the pipe and pipe perforations are sized sufficiently to handle the expected flow of leachate. For design of the leachate detection system (located between the liners) provide sufficient piping to provide for rapid and timely detection of any leakage. The leachate detection system sumps must be separate from the leachate collection system sumps and provided with provisions for measuring the quantity of collected leachate or leakage.

D-6f(4) Maximum Leachate Head: 703.207(b)(1), 724.401(a)(2) ok

Describe and demonstrate that the design and operating features will prevent the leachate depth over the top of the primary liner from exceeding one foot (i.e., one foot above the uppermost liner). Provide copies of calculations along with a justification of the assumed parameters and of the numerical technique used.

D-6f(5) System Compatibility: 703.207(b)(1), 724.401(a)(2)(A)(i) 7

Demonstrate that all components of the leachate collection/detection systems are chemically resistant to the waste managed in the landfill and the leachate expected to be generated.

D-6f(6) System Strength

D-6f(6)(a) Stability of Drainage Layers: 703.207(b)(1), 724.401(a)(2)(A)(ii) ok

Demonstrate that the drainage layers of the leachate collection/detection systems have sufficient strength to support the loads and stresses computed in item D-6c(3) (i.e., sufficient soil bearing capacity to support loads). Demonstrate by providing calculations that the drainage layer to be placed on sloped surfaces of the landfill or foundation will be stable during construction.

D-6f(6)(b) Strength of Piping: 703.207(b)(1), 724.401(a)(2)(A)(ii)

Demonstrate that the pipe used in the piping systems has sufficient strength (crushing or deflection, as appropriate) to support the loads computed in item D-6c(3).

D-6f(7) Prevention of Clogging: 703.207(b)(1), 724.401(a)(2)(B)

Demonstrate that the leachate collection/detection systems are designed and operated to prevent clogging (due to piping) of the drainage layer material or the pipes throughout the active life of the landfill. Consideration must be given to physical, chemical, and/or biological clogging. As an alternative, describe how clogging would be detected and what cleanout procedures would be used to restore the capacity of the systems. Include calculations demonstrating the effectiveness of the protection material or system.

D-6g Liner System, Construction and Maintenance

D-6g(1) Material Specifications

D-6g(1)(a) Synthetic Liners: 703.207(b)(1), 724.401(a)(1)

Provide detailed material specifications for the specific synthetic liner or liners to be used.

D-6g(1)(b) Soil Liner: 703.207(b)(1), 724.401(a)(1)

For soil liners constructed of borrow material, provide specifications for the soil material. For soil liners utilizing in-place soil, provide specifications to be used to assure that all existing materials meet the requirements of the liner design. Provide a testing procedure for determining in situ permeability of the soil liner after construction. Also provide a criteria for approval of the material before placement of additional components of the liner system. For soil liners which use amended soil, provide material specifications for the amendment material. The soil liner material specifications should indicate the maximum particle size (this is very critical if a synthetic liner is to be placed directly on the soil liner) and call for the removal of roots and other unsuitable material.

D-6g(1)(c) Leachate Collection/Detection System: 703.207(b)(1), 724.401(a) and (c)

Provide material specifications for:

- . Drainage layer material;
- . Filter fabric or filter layer;
- . Piping; and
- . Sumps.

D-6g(2) Construction Specifications

D-6g(2)(a) Liner System Foundation: 703.207(b)(1), 724.401(a)(1), 724.403(a)

For installed foundations, provide construction specifications of the foundation installation procedures. For units which use in-place material for the liner system foundation, provide construction specifications for preparation of the liner system foundation.

D-6g(2)(b) Soil Liner: 703.207(b)(1), 724.401(a)(1), 724.403(a)(2)

Describe the procedures for installing the soil liner, including:

- . Method of compaction;
- . Degree of compaction and moisture content that must be achieved;
- . Lift thickness;
- . Methods to be used to alter the water content of the soil;
- . Procedures to be used to decrease clod size;
- . Scarification requirement between lifts; and
- . If applicable, method of amending the soil.

D-6g(2)(c) Synthetic Liners: 703.207(b)(1), 724.401(a)(1), 724.403(a)(1)

Provide construction specifications for placement of the synthetic liners which include:

- . Inspection of the synthetic liner bed for material which could puncture the liner (and removal of that material);
- . Placement procedures;
- . Techniques to be utilized to bond the liner seams; and
- . Procedures for protection of the liner before and during placement of material on top of the liner.

D-6g(2)(d) Leachate Collection/Detection System: 703.207(b)(1), 724.401(a) and (c)

Provide construction specifications for placement of all components of the leachate collection/detection system, including:

- . Drainage layers;
- . Piping;
- . Sumps, pumps, etc.;
- . Filter layers; and
- . Any protective layer placed to protect the system during construction or operation.

D-6g(3) Construction Quality Control Program: 703.207(b)(1), 702.152(b),
724.403(a)

Provide complete details of the quality control program to be used during construction of the liner system to assure that it is built as designed. Include a description of all testing procedures such as testing of the synthetic liner seams, in situ permeability testing of the soil liner, compaction control for the soil liner, etc. Indicate if the owner or the contractor will perform the testing and inspection and indicate the necessary qualifications of the testing and inspection personnel. The applicant should refer to the EPA Technical Guidance Document entitled "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities", EPA/530-SW-031.

D-6g(4) Maintenance Procedures for Leachate Collection/Detection System:
703.207(b)(1), 724.401(a) and (c)

Describe the anticipated maintenance activities that will be used to assure proper operation of the leachate collection/detection systems throughout the landfill's expected life.

D-6g(5) Liner Repairs During Operations: 703.207(b)(1), 724.401(a)

Describe the methods that will be used to repair any damage to the liner which occurs while the landfill is in operation during placement of the waste (e.g. a dozer ripping the liner).

D-6h Run-on and Run-off Control Systems

D-6h(1) Run-on Control System: 703.207(b)(2), 724.401(f)

Describe the system that will be used to prevent run-on onto active portions of the landfill.

D-6h(1)(a) Design and Performance: 703.207(b)(2), 724.401(f)

Describe the run-on control system design and how that design prevents run-on from reaching the active portions of the site. Provide a plan view showing the locations of the run-on control systems components, along with sufficient drawing details, profiles, cross sections, and the calculations used to size the system.

D-6h(1)(b) Calculation of Peak Flow: 703.207(b)(2), 724.401(f)

Identify the peak surface water flow expected to result from a 25-year design storm. Describe the data sources and methods used to make the peak flow calculation. Provide copies of the calculations and data, including appropriate references.

D-6h(2) Run-off Control System: 703.207(b)(3), 724.401(g)

Describe the run-off control system to be used to collect and control run-off from active portions of the landfill.

D-6h(2)(a) Design and Performance: 703.207(b)(3), 724.401(g)

Describe the run-off collection and control system design. Provide calculations demonstrating that the system has sufficient capacity to collect and hold the total run-off volume. Provide a plan view showing the locations of the run-off control system components, along with sufficient drawing details and cross sections. Indicate the fate of the collected run-off which is considered hazardous waste until tested and/or treated.

D-6h(2)(b) Calculation of Peak Flow: 703.207(b)(3), 724.401(g)

Identify the total run-off volume expected to result from at least a 24-hour, 25-year storm. Describe data sources and methods used to make the peak flow calculation. Provide copies of the calculations and data, including appropriate references.

D-6h(3) Management of Collection and Holding Units: 703.207(b)(4), 724.401(h)

Describe how collection and holding facilities associated with run-on and run-off control systems will be emptied or otherwise managed expeditiously after storms to maintain system design capacity. Describe the fate of liquids discharged from these systems.

D-6h(4) Construction: 703.207(b)(2) and (3), 724.401(f) and (g)

Provide detailed construction and material specifications for the run-on and run-off control systems. Include descriptions of the construction quality control program that will be utilized to assure that construction is in accordance with design requirements.

D-6h(5) Maintenance: 703.207(b)(2) and (3), 724.401(f) and (g)

Describe any maintenance activities required to assure continued proper operation of the run-on and run-off control systems throughout the active life of the unit.

D-6i Control of Wind Dispersal: 703.207(b)(5), 724.401(i)

If the landfill contains any particulate matter which may be subject to wind dispersal, describe how the landfill is covered or otherwise managed to control wind dispersal.

D-6j Liquids in Landfills

D-6j(1) Bulk or Noncontainerized Free Liquids: 703.207(h), 724.414, 729.320

Describe the procedures that will be used to ensure that no bulk or noncontainerized liquid hazardous waste or waste with free liquids will be placed in the landfill. Describe the processes used to stabilize liquids before placement in the landfill. Note: The use of materials which act only as absorbents is prohibited. Effective November 8, 1985, demonstrate that no free liquids, including nonhazardous liquids, will be placed in the landfill unless it can be demonstrated that placement in the landfill is the only reasonably available alternative to disposal in other landfills or unlined surface impoundments and the placement of the liquids will not present a risk of contamination of any underground source of drinking water. Note: The use of the paint filter test, Method 9095, is required in order to demonstrate the absence of free liquids in a stabilized waste.

~~D-6j(2) Containers Holding Free Liquids:~~ ~~703.207(h), 724.414(d)~~

~~For facilities which intend to dispose of containers holding free liquids, describe how the free liquids will be removed from the containers or stabilized within the container before the container is placed in the landfill. If the liquid is removed, the container must be backfilled or crushed as discussed in item D-6k.~~

~~D-6j(3) Restriction to Small Containers:~~ ~~703.207(h), 724.414(d)(2)~~

~~If small containers are to be disposed in the landfill, demonstrate (by indicating the container volume) that the containers will be very small (such as ampules).~~

~~D-6j(4) Nonstorage Containers:~~ ~~703.207(h), 724.414(d)(3)~~

~~If nonstorage containers are to be disposed in the landfill, demonstrate (by describing the containers) that the containers are designed to hold free liquids for use other than storage (e.g., batteries, capacitors).~~

~~D-6j(5) Labpacks:~~ ~~703.207(h), 724.414(d)(4)~~

~~Describe how it will be assured that labpacks to be landfilled containing free liquids meet the following requirements:~~

~~D-6j(5)(a) Inside Containers:~~ ~~703.207(h), 724.414(d)(4), 724.416(a)~~

~~Demonstrate how it will be assured that inside containers:~~

- ~~· Are securely sealed and not leaking;~~
- ~~· Will not react with, be decomposed by, or ignited by the waste; and~~
- ~~· Meet DOT specifications.~~

~~D-6j(5)(b) Overpack:~~ ~~703.207(h), 724.414(d)(4), 724.416(b)~~

~~Demonstrate that overpacking consists of:~~

- ~~· Metal, DOT containers, with open heads no larger than 110 gallons; and~~
- ~~· Sufficient absorbent material.~~

~~D-6j(5)(c) Absorbent Material:~~ ~~703.207(h), 724.414(d)(4), 724.416(c)~~

~~Demonstrate that the absorbent materials used are not capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers.~~

~~D-6j(5)(d) Incompatible Wastes:~~ ~~703.207(h), 724.414(d)(4), 724.416(d)~~

~~Demonstrate that incompatible wastes will not be placed in the same outside containers.~~

~~D-6j(5)(e) Reactive Wastes:~~ ~~703.207(h), 724.414(d)(4), 724.416(e)~~

~~Demonstrate how reactive wastes, other than cyanide bearing and sulfide bearing wastes, will be treated or rendered nonreactive prior to packaging.~~

~~D-6k Containerized Wastes:~~ ~~703.207(i), 724.415~~

~~If containerized solid wastes are to be landfilled, describe how either: it will be assured that all containers are at least 90 percent full when placed in the landfill, or containers will be crushed, shredded or similarly reduced in volume to the maximum practical extent before burial.~~

D-6l Special Waste Management Plan for Landfills Containing Wastes F020, F021, F022, F023, F026, and F027: 703.207(j), 724.417

Provide a plan describing how landfill units containing wastes F020, F021, F022, F023, F026, and F027 are or will be designed, constructed, operated, and maintained in order to protect human health and the environment. The plan must address the following factors:

D-6l(1) Waste Description: 703.207(j)(1), 724.417(a)(1)

Identify the volume and physical, and chemical characteristics of the wastes, including their potential to migrate through the soil, volatilize or escape into the atmosphere.

D-6l(2) Soil Description: 703.207(j)(2), 724.417(a)(2)

Describe the attenuative properties of underlying and surrounding soils or other materials.

D-6l(3) Mobilizing Properties: 703.207(j)(3), 724.417(a)(3)

Describe the mobilizing properties of other materials codisposed with these wastes.

D-6l(4) Additional Management Techniques: 703.207(j)(4), 724.417(a)(4)

Document the effectiveness of additional treatment, design, operating, or monitoring techniques in reducing the migratory potential of these wastes to groundwater, surface water, or air.

RCRA Decision Guide (Revised 1990)

I. CLOSURE AND POST-CLOSURE REQUIREMENTS: 703.183(m), 724.210 through 724.220

I-1 Closure Plans: 703.183(m), 724.212

Include a copy of the written closure plan consistent with I-1a through I-1g, including an estimate of the maximum inventory of wastes in storage and treatment at any time.

I-1a Closure Performance Standard: 724.211

Describe how the closure plan provided minimizes the need for post-closure maintenance and minimizes releases of wastes and hazardous constituents.

I-1b Partial and Final Closure Activities: 724.212(b)(1) and (2)

If partial closure is anticipated, describe how and when the facility will be partially closed, including an identification of the maximum extent of operation after partial closure. Describe how and when the facility will finally be closed.

I-1c Maximum Waste Inventory: 724.212(b)(3)

Describe the maximum inventory of wastes ever in storage and in treatment at any time during the life of the facility.

I-1d Inventory Removal, Disposal or Decontamination of Equipment, Structures and Soils: 724.212(b)(3) and (4), 724.214

Describe how the hazardous waste inventory will be removed or treated and how all facility equipment, structures and soils will be decontaminated or disposed when closure is completed. Alternatively, provide information for closing the unit as a disposal facility as described in I-1e.

~~I-1d(1) Closure of Containers: 724.278~~

~~Show that at closure, all hazardous waste and hazardous waste residue will be removed from the containment system, and how remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues will be decontaminated or removed.~~

~~I-1d(2) Closure of Tank Systems: 724.297, 724.410~~

~~Show that at closure, the owner or operator shall remove or decontaminate all hazardous waste and hazardous waste residues, contaminated containment system components (liners, etc.), contaminated soils, structures and equipment. If all of the contaminated soils cannot be practicably removed or decontaminated, the tank system must close, perform post-closure care, and provide financial assurance in accordance with the requirements for landfills [I-1e] and [I-2]. If the tank system does not have a secondary containment system which meets Part 724 standards and has not been granted alternative design or operation under 724.293(g), the closure plan must incorporate the contingency that the tank system will be closed as a landfill [I-1e] and [I-2] and must also include a contingent post-closure plan and financial assurance for post-closure care.~~

~~I-1d(3) Closure of Waste Piles: 703.204(h), 724.358~~

~~Describe how the hazardous waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate will be removed or decontaminated at closure and managed as hazardous waste. If any wastes, waste residues or contaminated materials or soils will remain after closure, provide plans for closing the pile as a landfill [I-1e] and provide post-closure plans [I-2]. Piles without liners or with liners that do not meet the requirements of D-3c must also provide contingent plans for closing the facility as a landfill [I-1e] and a contingent post-closure plan [I-2].~~

~~I-1d(4) Closure of Surface Impoundments: 703.203(f), 724.328~~

~~Describe how the hazardous waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, contaminated groundwater and structures and equipment contaminated with waste and leachate will be removed or decontaminated at closure and managed as hazardous waste. If any wastes, waste residues or contaminated materials or soils will remain after closure, provide plans for closing the surface impoundment as a landfill [I-1e] and provide post-closure plans [I-2]. Surface impoundments without liners or with liners that do not meet the requirements of D-4c must also provide contingent plans for closure as a disposal unit [I-1e] and a contingent post-closure plan [I-2], except for impoundments requesting a liner exemption in accordance with D-4b.~~

~~I-1d(5) Closure of Incinerators: 724.451~~

~~Describe how, at closure, all hazardous residues will be removed from the incinerator, associated ductwork, piping, air pollution control equipment, sumps, and any other structures or operating equipment such as pumps, valves, etc., that have come into contact with the hazardous waste. Alternatively, describe how the incinerator and associated units and equipment will be dismantled and disposed as a hazardous waste.~~

~~I-1d(6) Closure of Land Treatment Facilities: 724.212, 724.380~~

~~I-1d(6)(a) Continuance of Treatment: 724.380(a)(1)–(a)(7)~~

~~Describe how, during the closure period, all operations (including pH control) necessary to maximize degradation, transformation and immobilization of hazardous constituents within the treatment zone will be continued. Include a description of how, during the closure period, run-off of hazardous constituents will be minimized, and how run-on, run-off and wind dispersal control systems will be maintained. Demonstrate that compliance with any prohibitions or conditions concerning growth of food-chain crops will be continued. Demonstrate that unsaturated zone monitoring also will be continued.~~

~~I-1d(6)(b) Vegetative Cover: 703.206(f), 724.380(a)(8)~~

~~Describe the vegetative cover to be established during closure, including:~~

- ~~:~~ Common name, species and variety of the cover crop to be established;
- ~~:~~ Data showing that the cover crop can thrive in the soils and climate in which it will be placed;
- ~~:~~ The minimum percentage of soil cover to be maintained on the closed land treatment unit; and
- ~~:~~ Methods to be used to establish and maintain the cover.

I-1e Closure of Disposal Units: 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.328(a)(2), 724.328(c)(1)(A), 724.358(c), 724.410(a)

Closure plans for all piles, landfills, tank systems and surface impoundments in which wastes or contaminated materials are to remain at closure must describe how the unit will be closed, including a description of the final cover to be established and its expected performance. Contingent closure plans for tank systems, surface impoundments and waste piles also must provide these descriptions.

~~I-1e(1) Disposal Impoundments:~~ ~~724.328(a)(2)~~

~~If wastes are to remain in the impoundment after closure, describe the methods for preparing the wastes for the final cover.~~

~~I-1e(1)(a) Elimination of Liquids:~~ ~~724.328(a)(2)(A)~~

~~Describe how free liquids are to be removed or solidified at closures.~~

~~I-1e(1)(b) Waste Stabilization:~~ ~~724.328(a)(2)(B)~~

~~Describe the methods to be used to stabilize remaining wastes to support the final cover, including:-~~

- ~~- Stabilization methods, equipment and materials;~~
- ~~- Required bearing strength of the stabilized waste;~~
- ~~- Demonstration of stabilized waste bearing strength; and~~
- ~~- Methods for bearing strength determination during closure.~~

I-1e(2) Cover Design: 724.328(a)(2)(C), 724.410(a)

The cover design and installation procedures should be thoroughly described. This submission should include:

- . Drawings showing cover layers, thicknesses, slopes and overall dimensions;
- . The common name, species and variety of the proposed cover crop;
- . Descriptions of synthetic liners to be used, including chemical properties, strength, thickness and manufacturer's specifications;
- . Description of rationale for cover selection;
- . Descriptions of and specifications for protective materials placed above and below synthetic liners;
- . Clay liner characteristics, including thickness and hydraulic conductivity; and
- . Clay liner construction plans, including lift sequencing.

I-1e(3) Minimization of Liquid Migration: 724.328(a)(2)(C)(i), 724.410(a)

For all cover designs provide engineering calculations showing that the proposed cover will provide long-term minimization of liquid migration through the cover.

I-1e(4) Maintenance Needs: 724.328(a)(2)(C)(ii), 724.410(a)

Demonstrate that the cover system will function effectively with minimum maintenance needs.

I-1e(5) Drainage and Erosion: 724.328(a)(2)(C)(iii), 724.410(a)

Provide the following information:

- . Data demonstrating that the proposed final slopes will not cause significant cover erosion;
- . Descriptions of drainage materials and their hydraulic conductivities;
- . Engineering calculations demonstrating free drainage of precipitation off of and out of the cover; and
- . Estimation of the potential for drainage-layer clogging.

I-1e(6) Settlement and Subsidence: 724.328(a)(2)(C)(iv), 724.410(a)

Describe potential cover settlement and subsidence, considering immediate settlement, primary consolidation, secondary consolidation, and creep and liquefaction. Include the following information:

- . Potential foundation compression;
- . Potential soil liner compression; and
- . Potential waste consolidation and compression resulting from waste dewatering, biological oxidation and chemical conversion of solids to liquids.

Describe the effects of potential subsidence/settlement on the ability of the final cover to minimize infiltration.

I-1e(7) Cover Permeability: 724.328(a)(2)(C)(v), 724.410(a)

Demonstrate that the cover system will have a permeability less than or equal to that of the liner system.

I-1e(8) Freeze/Thaw Effects: 724.328(a)(2)(C), 724.410(a)

Identify the average depth of frost penetration and describe the potential effects of freeze/thaw cycles on the cover.

I-1f Schedule for Closure: 724.212(b)(6)

Provide a schedule for closure of each hazardous waste management unit and for final closure of the facility, including total time to close each hazardous waste management unit and the time required for intervening closure activities, which will allow tracking of the progress of closure.

I-1g Extensions of Closure Time: 724.213

Submit a petition for a schedule for closure which exceeds the 90 days for treatment, removal or disposal of wastes and/or the 180 days for completion of closure activities which justifies that a longer period of closure time is required. Please note that approvals of Adjusted Standards for delay of closure to receive non-hazardous waste must be performed by the Illinois Pollution Control Board.

I-2 Post-Closure Plan: 703.183(m), 703.203(f), 703.204(h), 703.207(e), 724.218, 724.297(b) and (c), 724.328(b), 724.328(c)(1)(B), 724.380(c), 724.410(b)

Submit a copy of the most recent post-closure plan or, if applicable, the contingent post-closure plan. Landfill, surface impoundment and waste pile post-closure plans should address Items I-2a, b and c; land treatment unit post-closure plans should address Item I-2d.

I-2a Inspection Plan: 724.218(b), 724.328(b), 724.328(c)(1)(B), 724.358(b), 724.358(c)(1)(B), 724.380(c), 724.410(b)

Describe the inspections to be conducted during the post-closure care period, their frequency, the inspection procedure, and the logs to be kept. The following items, as applicable, should be included in the inspection plan:

- . Security control devices;
- . Erosion damage;
- . Cover settlement, subsidence and displacement;
- . Vegetative cover condition;
- . Integrity of run-on and run-off control measures;
- . Cover drainage system functioning;
- . Leak detection system;
- . Leachate collection and removal system;
- . Gas venting system;
- . Well condition; and
- . Benchmark integrity.

The rationale for determining the length of time between inspections should be provided.

I-2b Post-Closure Monitoring Plan: 724.328(b), 724.328(c)(1)(B), 724.358(b), 724.358(c)(1)(B), 724.410(b)

Describe the monitoring to be conducted during the post-closure care period, including, as applicable, the procedures for conducting and evaluating the data gathered from:

- . Groundwater monitoring;
- . Leachate collection and removal; and
- . Leak detection between liners.

I-2c Post-Closure Maintenance Plan: 724.328(b), 724.328(c)(1)(B),
724.358(b), 724.358(c)(1)(B), 724.410(b)

Describe the preventive and corrective maintenance procedures, equipment requirements and material needs. Include the following items in the maintenance plan, as applicable:

- . Repair of security control devices;
- . Erosion damage repair;
- . Correction of settlement, subsidence and displacement;
- . Mowing, fertilization and other vegetative cover maintenance;
- . Repair of run-on and run-off control structures;
- . Leachate removal system maintenance; and
- . Well replacement.

Describe the rationale to be used to determine the need for corrective maintenance activities.

~~I-2d Continued Land Treatment:~~ ~~724.380(a), 724.380(e)~~

~~Describe the operation, inspection, and maintenance programs to be used at the closed facility. Include descriptions of the procedure and frequency for conducting the following activities:~~

- ~~. Continuance of land treatment;~~
- ~~. Vegetative cover maintenance;~~
- ~~. Maintenance of run-on control systems and run-off management systems;~~
- ~~. Wind dispersal control;~~
- ~~. Control of food-chain crops; and~~
- ~~. Unsaturated zone monitoring.~~

I-3 Notice in Deed and Certification: 703.183(n), 724.216, 724.217(c),
724.219

Existing facilities must submit a copy of the notice or notation recorded in the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that (1) the land has been used to manage hazardous wastes; (2) its use is restricted; and (3) the survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or area of the facility has been filed with the County Recorder, to any local zoning authority or the authority with jurisdiction over local land use and with the Agency. For hazardous wastes disposed prior to January 12, 1981, identify the type, location and quantity of the hazardous waste to the best of the owner or operator's knowledge and in accordance with any records the owner or operator has kept. Submit a certification to the Agency, signed by the owner or operator, that the owner or operator has properly recorded this certification.

~~I-4 Closure Cost Estimate: 703.183(e), 724.242~~

~~Provide a copy of the most recent closure cost estimate, calculated to cover the cost of closure when the cost would be greatest (not including partial closure). The cost must be updated annually using an inflation factor or by recalculating the maximum cost of closure in current dollars. Cost estimates must be based on third party costs and cannot include salvage value for sale of hazardous wastes, facility structures or equipment.~~

~~I-5 Financial Assurance Mechanism for Closure: 703.183(e), 724.243~~

~~Provide a copy of the established financial assurance mechanism for facility closure. The mechanism must be one of the following:~~

~~I-5a Closure Trust Fund: 724.243(a), 40 CFR 264.151(a)(1)~~

~~Provide a copy of the closure trust fund agreement with the wording required by 40 CFR 264.151(a)(1) and a formal certification of acknowledgement.~~

~~I-5b Surety Bond: 724.243(b) and (c), 724.251(b) and (c)~~

**~~I-5b(1) Surety Bond Guaranteeing Payment Into a Closure Fund: 724.253(b),
—— 40 CFR 264.151(b)~~**

~~Provide a copy of the surety bond with the wording required by 40 CFR 264.151(b), and a copy of the standby trust agreement. The bond must guarantee that the owner or operator will fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility, or fund the standby trust fund in an amount equal to the penal sum within 15 days of an order to begin closure, or provide alternate financial assurance if the bond is cancelled.~~

**~~I-5b(2) Surety Bond Guaranteeing Performance of Closure: 724.243(c), 40 CFR
—— 264.151(c)~~**

~~Provide a copy of the surety bond with the wording required by 40 CFR 264.151(c), and a copy of the standby trust agreement. The Bond must guarantee that the owner or operator will perform final closure in accordance with applicable Subtitle G requirements, or provide alternate financial assurance in the event the Bond is cancelled.~~

~~I-5c Closure Letter of Credit: 724.243(d), 40 CFR 264.151(d)~~

~~Provide a copy of the irrevocable letter of credit with the wording required by 40 CFR 264.151(d), a copy of the standby trust agreement, and a letter from the owner or operator referring to the letter of credit by number, issuing institution and date, and providing information on EPA identification number, name and address of facility, and amount of funds assured for closure of the facility. The letter of credit must be issued for a period of at least one year and be for the amount of estimated closure.~~

~~I-5d Closure Insurance: 724.243(e), 40 CFR 264.151(e)~~

~~Provide a copy of the certificate of insurance with the wording required in 40 CFR 264.151(e). The policy must be issued for face amount of estimated cost of closure. The policy must guarantee that funds will be available to close the facility upon final closure.~~

~~I-5e Financial Test and Corporate Guarantee for Closure: 724.243(f), 40 CFR 264.151(h)~~

~~Submit a letter signed by the owner's or operator's chief financial officer and worded as specified by 40 CFR 264.151(f), a copy of the independent certified public accountant's report on examination of the applicant's financial statements for the latest fiscal year, and a special report from the certified public accountant. If a parent company is guaranteeing closure for a subsidiary facility, a corporate guarantee worded in accordance with 40 CFR 264.151 must accompany the preceding items.~~

~~I-5f Use of Multiple Financial Mechanisms: 724.243(g)~~

~~Provide a copy of a combination of trust fund agreements, surety bonds guaranteeing payment into a closure trust fund, letters of credit, or insurance, the combination of which must provide financial assurance for the amount of the closure cost estimate.~~

~~I-5g Use of Financial Mechanism for Multiple Facilities: 724.243(h)~~

~~Provide a copy of a financial assurance mechanism for more than one facility showing, for each facility, the EPA ID number, name, address, and amount of funds closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. The amount of funds available must be sufficient to close all of the owner or operator's facilities.~~

~~I-6 Post Closure Cost Estimate: 703.183(p), 724.244~~

~~Provide a copy of the most recent post-closure cost estimate, calculated to cover the cost, in current dollars, of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure plan. The cost must be updated annually using an inflation factor.~~

~~I-7 Financial Assurance Mechanism for Post Closure Care: 703.183(p), 724.245~~

~~Provide a copy of the established financial assurance mechanism for post-closure care of the facility. The mechanism must be one of the following:~~

~~I-7a Post Closure Trust Fund: 724.245(a), 40 CFR 264.151(a)(1)~~

~~Provide a copy of the post-closure fund agreement with the wording required by 40 CFR 264.151(a)(1) and submit a formal certification of acknowledgement.~~

~~I-7b Surety Bond: 724.245(b) and (c), 40 CFR 264.151(b) and (c)~~

~~I-7b(1) Surety Bond Guaranteeing Payment Into a Post Closure Trust Fund:--~~

~~724.245(b), 40 CFR 264.151(b)~~

~~Provide a copy of the surety bond with the wording required by 40 CFR 264.151(b) and a copy of the standby trust agreement. The bond must guarantee that the owner or operator will fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility, or fund the standby trust fund in an amount equal to the penal sum within 15 days of an order to begin closure, or provide alternate financial assurance if the bond is cancelled.~~

~~I-7b(2) Surety Bond Guaranteeing Performance of Post-Closure Care:~~

~~724.245(c), 40 CFR 264.151(c)~~

~~Provide a copy of the surety bond with the wording required by 40 CFR 264.151(c), and a copy of the standby trust agreement. The bond must guarantee that the owner or operator will fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility, or fund the standby trust fund in an amount equal to the penal sum within 15 days of an order to begin closure, or provide alternate financial assurance if the bond is cancelled.~~

~~I-7c Post-Closure Letter of Credit: 724.245(d), 40 CFR 264.151(d)~~

~~Provide a copy of the irrevocable letter of credit with the wording required by 40 CFR 264.151(f), a copy of the standby trust agreement, and a letter from the owner or operator referring to the letter of credit by number, issuing institution and date, and providing information on EPA identification number, name and address of facility, and amount of funds assured for closure of the facility. The letter of credit must be issued for a period of at least one year and be for the amount of estimated closure.~~

~~I-7d Post-Closure Insurance: 724.245(e), 40 CFR 264.151(e)~~

~~Provide a copy of the certificate of insurance with the wording required in 40 CFR 264.151(e). The policy must be issued for face amount of estimated cost of closure. The policy must guarantee that funds will be available to close the facility upon final closure.~~

~~I-7e Financial Test and Corporate Guarantee for Post-Closure Care:~~

~~724.245(f), 40 CFR 264.151(f) and (h)~~

~~Submit a letter signed by the owner's or operator's chief financial officer and worded as specified by 40 CFR 264.151(f), a copy of the independent certified public accountant's report on examination of the applicant's financial statements for the latest fiscal year, and a special report from the certified public accountant. If a parent company is guaranteeing post-closure care for a subsidiary facility, a corporate guarantee, worded in accordance with 40 CFR 264.151, must accompany the preceding items.~~

~~I-7f Use of Multiple Financial Mechanisms: 724.245(g)~~

~~Provide a copy of a combination of financial mechanisms, including trust fund agreements, surety bonds guaranteeing payment into a post-closure trust fund, letters of credit, and insurance, the combination of which provide financial assurance for the amount of the closure cost estimate.~~

~~I-7g Use of Financial Mechanism for Multiple Facilities: 724.245(h)~~

~~Provide a copy of a financial assurance mechanism for more than one facility showing, for each facility, the EPA ID number, name, address, and amount of post-closure funds assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. The amount of funds available must be sufficient to close all of the owner or operator's facilities.~~

~~I-8 Liability Requirements: 703.183(q), 724.247~~

~~Provide copies of the required items documenting compliance with applicable liability requirements for sudden and nonsudden accidental occurrences.~~

~~I-8a Coverage for Sudden Accidental Occurrences: 724.247(a)~~

~~Liability coverage must be maintained for sudden accidental occurrences in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million. Liability coverage may be demonstrated in one of three ways:~~

~~I-8a(1) Endorsement or Certification: 724.247(a)(1)~~

~~Submit a signed duplicate original of the Hazardous Waste Facility Liability Endorsement, with the wording specified by 40 CFR 264.151(i), or of a Certificate of Liability Insurance, with the wording specified by 40 CFR 264.151(j).~~

~~I-8a(2) Financial Test for Liability Coverage: 724.247(a)(2), 724.247(f)~~

~~Submit a letter signed by the owner's or operator's chief financial officer and worded as specified by 40 CFR 264.151(g), a copy of the independent certified public accountant's report on examination of the applicant's financial statements for the latest fiscal year, and a special report from the certified public accountant. If the applicant is using the financial test to demonstrate both assurance for closure or post-closure care and liability coverage, the letter specified in 40 CFR 264.151(g) must be submitted to cover both forms of financial responsibility. Under these circumstances, a separate letter as specified by 40 CFR 264.151(f) is not required.~~

~~I-8a(3) Use of Multiple Insurance Mechanisms: 724.247(a)(3)~~

~~Submit items demonstrating required liability coverage through a combination of endorsement or certification and financial test as these mechanisms are specified in this section (see I-8a(1) and I-8a(2)). The amounts of coverage demonstrated must total at least the minimum amounts required by 264.147(a).~~

~~I-8b Coverage for Nonsudden Accidental Occurrences: 724.247(b)~~

~~Liability coverage must be maintained for nonsudden accidental occurrences in the amount of at least \$3 million per occurrence with an annual aggregate of at least \$6 million. If coverage levels for sudden and non-sudden accidental occurrences are combined, liability coverage must be maintained for \$4 million per occurrence and \$8 million aggregate. Coverage may be demonstrated in one of three ways:~~

~~I-8b(1) Endorsement or Certification: 724.247(b)(1)~~

~~Submit a signed duplicate original of the Hazardous Waste Facility Liability Endorsement, with the wording specified by 40 CFR 264.151(i), or of a Certificate of Liability Insurance, with the wording specified by 40 CFR 264.151(j).~~

~~I-8b(2) Financial Test for Liability Coverage: 724.247(b)(2), 724.247(f)~~

~~Submit a letter signed by the owner's or operator's chief financial officer and worded as specified by 40 CFR 264.151(g), a copy of the independent certified public accountant's report on examination of the applicant's financial statements for the latest fiscal year, and a special report from the certified public accountant. If the applicant is using the financial test to demonstrate both assurance for closure or post-~~

closure care and liability coverage, the letter specified in 40 CFR 264.151(g) must be submitted to cover both forms of financial responsibility. Under these circumstances, a separate letter as specified by 40 CFR 264.151(f) is not required.

~~I-8b(3) Use of Multiple Insurance Mechanisms: 724.247(b)(3)~~

~~Submit items demonstrating required liability coverage through a combination of endorsement or certification and financial test as these mechanisms are specified in I-8b(1) and I-8b(2). The amounts of coverage demonstrated must total at least the minimum amounts required by 724.247(a).~~

~~I-8c Request for Variance: 724.247(e)~~

~~Request for an adjusted level of required liability coverage must be accompanied by supporting information to demonstrate that established levels of financial responsibility specified in 724.247(a) or (b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the applicant's facility or group of facilities.~~

~~I-9 State Mechanisms: 40 CFR 264.149, 40 CFR 264.150, 40 CFR 264.151, 40 CFR 270.14(b)(18)~~

~~I-9a Use of State Required Mechanism: 40 CFR 264.151~~

~~Where a state has hazardous waste regulations with equivalent or greater liability requirements for financial assurance for closure and post-closure care, provide a copy of the state required financial mechanisms, including the facility EPA ID number, name, address, and amounts of coverage and a letter requesting that the state mechanism be considered acceptable.~~

~~I-9b State Assumption of Responsibility: 40 CFR 270.14(b)(18), 264.150~~

~~If a state assumes legal responsibility for compliance with closure, post-closure, or liability requirements, or the state assures that state funds are available to cover those requirements, submit a copy of a letter from the state describing the state assumption of responsibility and including the facility EPA ID number, name, address, and amounts of liability coverage or funds for closure or post-closure care that are assured by the state, together with a letter requesting that the state's assumption of responsibility be considered acceptable.~~